

liquid crystal sandwiched between the first substrate and the second substrate,
wherein the first substrate and the second substrate are formed with a first
opening area and a second opening area for each pixel, and
wherein, one of the first substrate and the second substrate irradiated with
incident light is formed with a microlens so as to oppose each pixel, and
the microlens refract incident light from a clear viewing direction toward the
opening area, and a part of the incident light from opposite of the clear viewing direction
toward the unopened area.--

REMARKS

Claims 1-29 are pending. By this Amendment, claims 1, 5 and 11 are amended,
claims 28 and 29 are added and the drawings are replaced pursuant to the attached Notice to
the Official Draftsperson.

The attached Appendix includes marked-up copies of each rewritten claim (37 C.F.R.
§1.121(c)(1)(ii)).

Reconsideration based on the following remarks is respectfully requested.

I. The Drawings Satisfy All Formal Requirements

The Office Action indicates that the drawings require correction. The attached Notice
to the Official Draftsperson submits replacement drawings to correct any informalities.

II. The Claims Satisfy the Requirements of 35 U.S.C. §112, Second Paragraph

The Office Action rejects claims 1, 5-7, 9-17 and 19 under 35 U.S.C. §112, second
paragraph as being indefinite. Claims 1, 5 and 11 are amended to obviate the rejection of
those claims. Regarding the rejection of claims 1, 7 and 9-17, the antecedent basis for "one
substrate" can be found in line 7 of claim 1, and the antecedent basis for "the other substrate"
can be found in claim 6.

Further, the Office Action asserts that the recitation of "a non lens area that allows light perpendicularly incident on the one substrate to travel in a straight line toward the liquid crystal formed on a center of the pixel in the microlens" in claim 16 is unclear. This assertion is respectfully traversed. When read in conjunction with the specification, particularly the description on page 49, line 21-page 50, line 19, one having ordinary skill in the art would understand what is being claimed in claim 16.

The Office Action also asserts that the recitation of "first substrate" in claim 20 lacks sufficient antecedent basis. However, antecedent basis for this feature can be found in claim 19.

Withdrawal of the rejection under 35 U.S.C. § 112, second paragraph is respectfully requested.

II. The Claims Define Patentable Subject Matter

The Office Action rejects claims 1-20 under 35 U.S.C. §102(b) over Oh et al. (U. S. Patent No. 5,844,644); claims 21 under 35 U.S.C. §103(a) over Oh in view of Suzuki et al. (U.S. Patent No. 6,437,764); and claims 22-27 under 35 U.S.C. §103(a) over Oh in view of Hayashi et al. (U.S. Patent No. 6,193,376). These rejections are respectfully traversed.

Oh does not disclose or suggest a liquid crystal device in which, *inter alia*, a first substrate and a second substrate transmits, of light incident from one substrate, light incident from a clear viewing direction in a larger amount than light incident from opposite of the clear viewing direction, as recited in claim 1.

Instead, Oh discloses a liquid crystal display that has an overcoat layer formed over a second substrate. The overcoat layer of Oh is patterned to form microlenses for refracting the incident light to pass through light transmissive portions of a first substrate without being blocked by light of untransmissive portions of the first substrate. The structure shown in Fig. 3 of Oh does not emit light incident from a clear viewing direction in a larger amount than

light incident from opposite of the clear viewing direction, but instead, similar to the conventional liquid crystal device discussed at page 5, lines 18-21 of the specification, increases the amount of light incident from opposite the clear viewing direction. Thus, in contrast to the claimed invention, the liquid crystal display of Oh exhibits deteriorated contrast characteristics.


For at least these reasons, it is respectfully submitted that claim 1 is patentable over the applied references. The dependent claims are likewise patentable over the applied references for at least the reasons discussed as well as for the additional features they recite. Applicants respectfully request that the rejections under 35 U.S.C. 102 and 103 be withdrawn.

III. Conclusion

In view of the foregoing, Applicants respectfully submit that this application is in condition for allowance. Favorable consideration and prompt allowance are earnestly solicited.

Should the Examiner believe anything further is desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,



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Date: December 26, 2002

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APPENDIX

1. (Amended) A liquid crystal device comprising:
 - a first substrate formed with a plurality of pixels, each pixel having a pixel electrode formed thereon;
 - a second substrate opposing the first substrate; and
 - liquid crystal sandwiched between the first substrate and the second substrate, the first substrate and the second substrate ~~emitting~~transmitting, of light incident from one substrate, light incident from a clear viewing direction in a larger amount than light incident from opposite of the clear viewing direction.
5. (Amended) The liquid crystal device according to claim 1, the one substrate comprising a microlens so as to oppose each pixel, and
 - an optical center position of the microlens being offset toward the clear viewing direction with respect to a center position of an opening area of another substrate ~~of the first substrate and the second substrate from which light is emitted.~~
11. (Amended) The liquid crystal device according to claim 1, further comprising an asymmetric microlens, that ~~emits~~transmits a larger amount of light incident on the one substrate from the clear viewing direction to the liquid crystal than an amount of light incident on the one substrate from opposite the clear viewing direction, formed in an area of the one substrate opposing each pixel.